

Claims

1. A biological specimen-culturing assembly comprising:
  - a) a specimen growth-supporting incubator, said incubator having at least one specimen-supporting shelf;
  - b) one or more optically transparent specimen container(s) positioned in said incubator on said shelf; and
  - c) specimen growth-monitoring equipment associated with said incubator to visually monitor individual specimen development in said container(s) during a specimen growth cycle, whereby individual specimen development can be visually ascertained externally of the incubator without the need to remove the specimen(s) from said incubator during said growth cycle.
2. The assembly of Claim 1 wherein said specimen container(s) are positioned in wells in said shelf.
3. The assembly of Claim 1 wherein said growth-monitoring equipment includes internal signal-producing optical imaging devices adjacent to said container(s) in said incubator, and at least one external image signal-processing device outside of said incubator, which image signal-processing device converts signals from said imaging devices to visual images.
4. The assembly of Claim 1 wherein said growth-monitoring equipment includes an internal audio signal-producing device adjacent to said container(s) in said incubator, and at least one external audio signal-processing device outside of said incubator, which audio signal-processing device is operable to record sounds emanating from specimens disposed in said specimen container(s).
5. The assembly of Claim 1 wherein said wells are rotatably mounted on said shelf and further including one or more driver(s) for selectively rotating said wells on said shelf.
6. The assembly of Claim 5 wherein there is a single optical imaging device adjacent

to each of said container(s), said container(s) being sized to contain a plurality of specimens, and said optical imaging device(s) being radially offset from an axis of said container(s), and wherein said driver(s) are operable to selectively and periodically align individual specimens disposed in said container(s) with said optical imaging device(s) during said growth cycle.

7. The assembly of Claim 3 wherein each of said wells includes a bottom wall which is a focussing lens for said optical-imaging device(s).

8. The assembly of Claim 7 wherein said optical imaging device(s) is (are) CCD camera(s).

9. A method for culturing biological specimens, said method comprising the steps of:

- a) providing a specimen culturing incubator;
- b) positioning a plurality of specimens to be cultured in said incubator for a time period which will result in a desired degree of specimen growth; and
- c) periodically visually monitoring each of said specimens while the latter remain in said incubator during said time period so as to determine growth characteristics of said specimens during said time period.

10. A biological specimen-culturing method comprising:

- a) the step of providing a specimen growth-supporting incubator, said incubator having at least one specimen-supporting shelf;
- b) the step of providing one or more optically transparent specimen container(s) positioned in said incubator on said shelf; and
- c) the step of optically monitoring individual specimen development in said container(s) during a specimen growth cycle, whereby individual specimen development can be visually ascertained externally of the incubator without the need to remove the specimen(s) from said incubator during said growth cycle.